Lesson 10 – Polar and Ionic Compounds Worksheet

1. Draw the Lewis structure or Lewis diagram of the molecules presented below and identify the major attractive intermolecular forces.

   a) I_2 b) MgO c) CH_3CN

   d) HF e) HCl

2. Draw the Lewis diagram of the following ionic compounds.

   a) NaF b) K_2O c) CaO

3. Which of the following substances is most likely to exist as a crystalline solid at room temperature. Which of the substances is the most likely to exist as a gas at room temperature?

   a) HF b) PCl_3 c) $FeCl_2$

   d) SO_2 e) F_2

4. Which of the following is expected to have the highest boiling point? Which one is expected to have the lowest boiling point?

   a) CO_2 b) Ar c) CF_4

   d) LiCl e) SiF_4

5. Give an explanation in terms of intramolecular/intermolecular forces for the following differences in boiling point.

   a) HF (20° C) and HCl (-85° C)

   b) $CHCl_3$ (61° C) and $CHBr_3$ (150° C)

   c) Br_2 (59° C) and ICl (97°C)

Questions, other than #2, are from http://butane.chem.uiuc.edu/anicely/chem102dfa10/Worksheets/Worksheet15_IMF.pdf